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OCTOBER 1957 25c

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See
page
14

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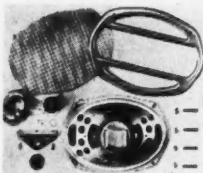
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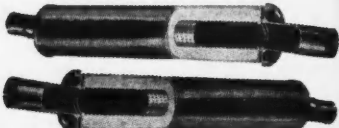
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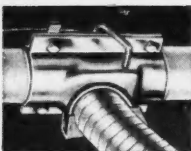
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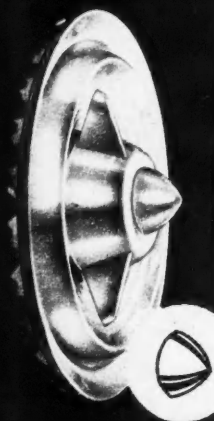
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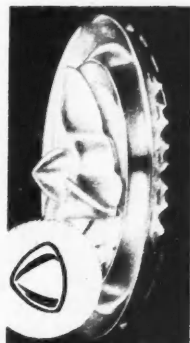
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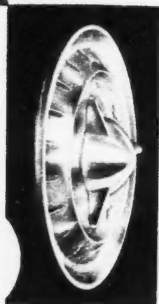


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Car Craft's October cover shows noted San Diego, California restorist Robbie Martinez demonstrating the technique of coloring automotive brightwork. For the inside story on how you can apply this same beautiful treatment to your own car see page 14. — Anacothrome by Dick

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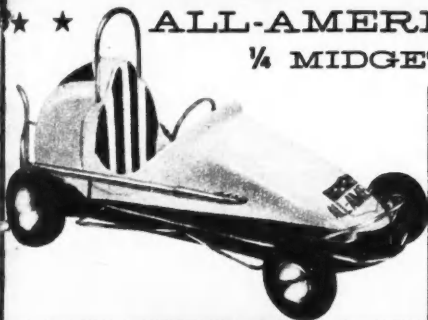
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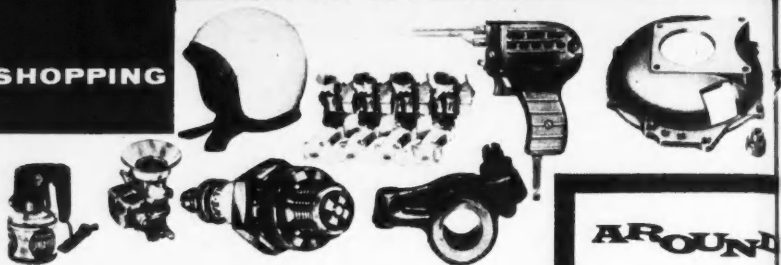
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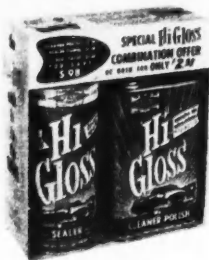
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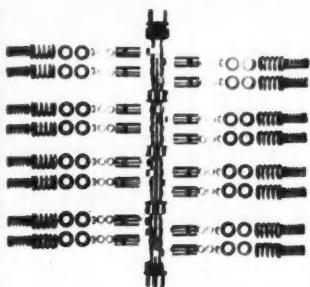
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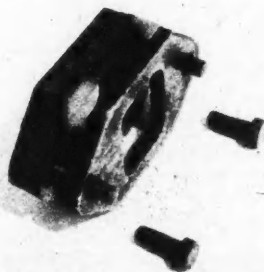
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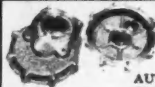
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LETTERS

LAST WORD ON Q.M.?

Dear Sir:

No doubt about it, CAR CRAFT is the
greatest! Your 10-page section on "Those
Marvelous Mercs" in July was fabulous —
I'm now fiberglassing mine with "Tap Kit".

About the Quarter Midget argument — I
don't particularly care for them, but — I sure-
ly wouldn't stop buying CAR CRAFT if you
decide to continue the series.

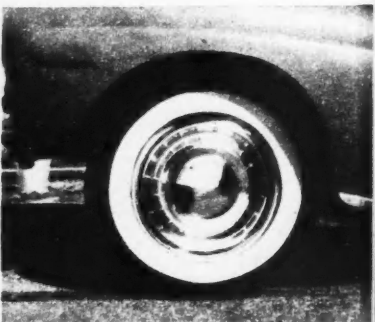
— Lynn Hanus,
Pasadena, Calif.

Anyone else go for this "middle of the road"
policy? — Ed.

WHEEL-COVER CAPER

Dear Sir:

in the May '57 issue of CAR CRAFT in
the Custom Queries department the problem
of adapting 15" wheel covers to 16" wheels
was discussed. I adapted '55 Chevrolet wheel



covers to my '47 Ford by mounting the 15"
Chev covers to the 16" Ford "beauty" trim
rings. It looks good and is quite economical —
better than buying all new wheels and tires.

— Gerald S. Lis,
Cincinnati, Ohio

Thanks, Gerald — your tip is sure to be appre-
ciated. — Ed.

FATHER'S FORTY

Dear Sir:

I have been a fan of CAR CRAFT for many
years now. Enclosed is a picture of a '40

Ford my father and I have improved upon. The body has been leveled-off about 3" lower than stock, while 15" Merc wheels help it



appear lower yet. The engine is a $\frac{3}{4}$ race flathead, with dual carburetors, exhausts, and ignition. The bumpers are from a '48 Ford, the upholstery is red and black naugahyde, and the body is painted Snow Shoe White.

I sincerely hope the car rates a place in your magazine.

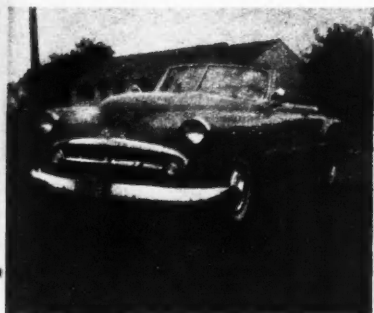
—Tom Franken,
Cincinnati, Ohio

Always a place for fine 'forties here, Tom.
—Ed.

PILGRIM'S PONTIAC

Dear Sir:

Enclosed is a snapshot of my '51 Pontiac convertible. Customs are becoming more



popular up here and I feel your magazine has a lot to do with it. My car has been nosed and decked, with the parking lights filled in and a '53 Chevrolet grille installed — which provides new parking lights itself.

—Dick Kardas,
Ware, Massachusetts

That's a nice original modification, Dick.—Ed.

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LETTERS

KENTUCKY KUSTOM

Dear Sir:

Enclosed you'll find pictures of my moderate "Kentucky Kustom" which I would like very much to see in your magazine. I use the word "custom" very loosely as the car has only had a very limited amount of work done to it. Other than the usual hood and



deck job, the grille has been reworked, seams around the parking lights filled, chrome removed from the front fenders, the short chrome strip on the door replaced with the one from the 4-door 210, and the center-section of a '56 Pontiac station wagon rear bumper installed.

I enjoy your magazine very much and it would be an honor to see my car within its covers.

— Otis Armstrong,
Hopkinsville, Kentucky

It's always been a question of quality rather than quantity with us, Otis, so your car is more than welcome.—Ed.

POWER BRAKES

Dear Sir:

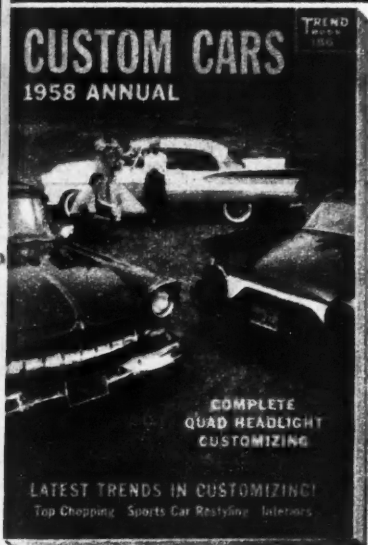
So far I have not been able to locate a parts store that carries the JEB master cylinder booster unit described in your July article, "Power to Stop". I would appreciate it if you could give me the address of a dealer in this area.

— Larry Butler,
Portland, Oregon

For the address of the JEB dealer nearest you, write: JEB Industries, 6235 Santa Monica Blvd., Los Angeles, California.—Ed.

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BY DICK DAY

COLOR

ONE OF THE BIGGEST boons to customizers is about to hit the country — it concerns **COLOR CHROME!** The color glamorizing fad has already reached enthusiastic acceptance in areas such as San Francisco, Oakland, Los Angeles, San Diego, and it's only a question of time 'til its sparkle infiltrates other areas possessing custom car interest and activity.

The marvelous thing about this new **COLOR CHROME** is the cost and ease of application. The process is one that centers around a liquid — in short, *synthetic enamel toner*. Being that a liquid is involved, the application must be done with a paint gun. Application can be made over any mirror-like finish such as chrome, polished aluminum or stainless steel. The secret lies in the fact that the automotive paint toner that is used is a very transparent liquid. When a reflecting surface is painted with the specified toner the surface takes on color, but since the toner is transparent, the mirrored reflection remains constant — hence, "**COLORED CHROME!**"

The paint product used is that of the Nason Paint Company (automotive paints) which has numerous national retail outlets, so procurement of the toner material should pose no problem. The toner comes in some six colors. It is referred to as "Glyko", and is coded with a "G" and a numeral for identification. Colors are as follows: Violet G-109, Green G-122, Blue G-111, Gold G-123, Lime Gold or Green Gold G-19, and Maroon G-14. The toner containers measure a pint which proves more than sufficient for any color chroming job. Price is very nominal — approximately \$1.50 for a pint can. Upon purchase you should specify to the salesman that a small amount of "G-M Dryer" be added to the toner which will cut the drying time of the material considerably. You will also need a small separate quantity of clear synthetic enamel for application mixture.

Application to date is heavily concentrated in the custom car's hubcap department — but it is rapidly becoming a popular treatment for grilles, side trim, chromed or polished engine compartment pieces, exhaust extension tips and general automotive accessories such as spot lights, radio antennas, etc. It should be clearly understood though that for components that are subjected to considerable heat, such as those found in the engine compartment close to the block and possibly along the exhaust system, that the toner

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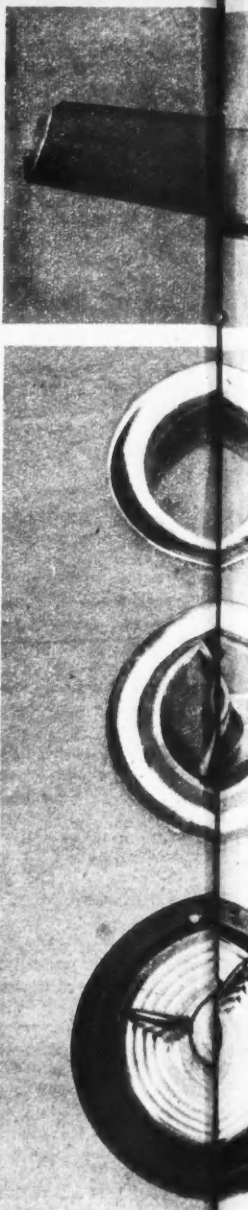
COLOR CHROME

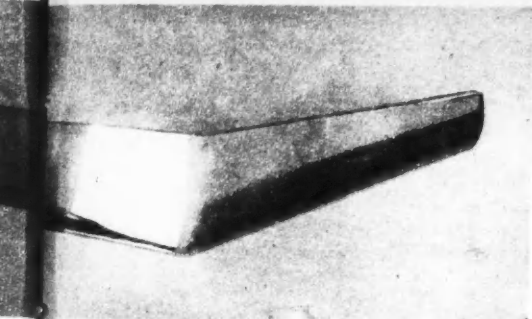
material would more than likely deteriorate (peel or bubble) because of the intense heat. Items such as valve covers, carburetor air cleaners, spark plug wiring looms covers, etc., have held up well under considerable testing. Extension exhaust tips are also favorable for the toner treatment.

Application of the toner is universal whether it be a hubcap that is being painted or an engine's polished valve cover. First requisition is that the item to be painted must be free of all wax or any substance that might prevent the toner from securely adhering to the surface. This is accomplished by thoroughly cleaning the surface with a liquid wax and grease remover—wiping it on, then wiping it dry with a clean cloth. Only other requirement before applying paint would be that of masking off any areas that you do not wish painted such as the case with many hubcap designs, etc.

Correct mixture of the toner should be on the thin side—after diluting slightly with thinner and adding a small amount of the clear enamel. Commence spraying the surface with a very light "fog" coat, until the surface is covered. This seems to give following coats a tacky surface to adhere to and assists in bonding the material to the chromed or polished surface. Secondary and following coats should be sprayed on evenly and sparingly, preventing the possibility of paint runs. If any irregularities or paint runs do appear on the surface, wipe the freshly painted toner off with a rag saturated in lacquer thinner, let the surface dry, clean with the wax and grease remover, then proceed again from the start with the painting application. The density of the tone is strictly controlled by the number of coats applied to the surface. Otherwise, the more coats of paint you put on the surface the darker the tone quality will be—and visa-versa.

We wish to thank Robbie Martinez and partner, Bill Wyman, of House of Customs, San Diego, California, and the Barris Brothers Custom Shop of Lynwood, California, for their generous cooperation in helping to bring this story to the readers of CAR CRAFT magazine. On the following pages you will find two step-by-step features dealing with how to go about "color chroming" two universal hubcaps which offers a photographic basis for getting you started on the "color chrome" treatment.



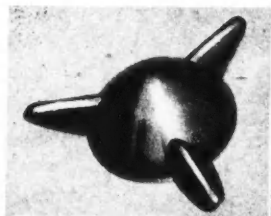
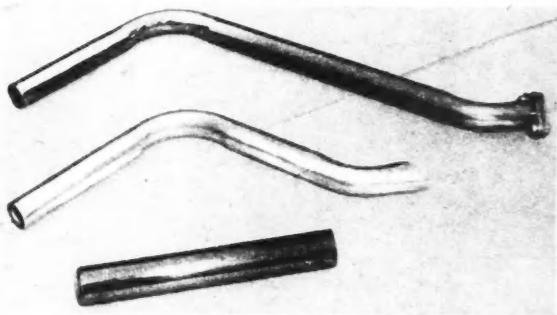


LEFT • Chromed grille components are naturals for the new color chrome treatment. Pictured here is the grille bar found on this month's cover.

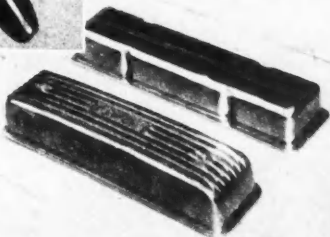
BELOW • The popular exterior exhaust systems featuring simulated beaders, etc., lend a nice effect trimmed out with this new color chrome treatment.



LEFT • Custom enthusiasts have placed most of their color chrome concentration in the hubcap department of their cars. Blades trimmed in harmonizing colors or painted back center sections seem to get the popular vote for appearance. This is just the start; many novel innovations will be forthcoming.



Spinners are also popular items for the new coloring process. Valve covers, air cleaners and chromed engine goodies are good. See this month's cover.



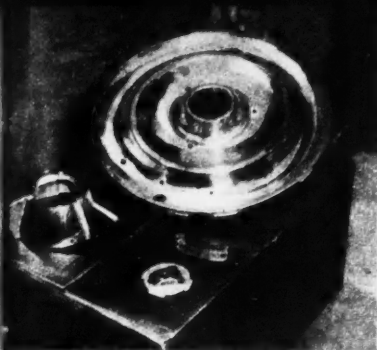
COLOR CHROME



Nason Paint Company (Automotive paints) offers six colors to choose from: Maroon, Blue, Lime or Gold Green, Gold, Violet, Green. Numeral coding for these various toners can be found in story's text. Pictured above is material used in article.



1. If hubcap centers are to be paint-back, then blades must be removed. If blades don't come off, then use masking tape.



2. With blades removed, surface is thoroughly cleaned with wax grease remover.



3. Small 1/4" masking tape works best when masking border, then larger tape/paper.



4. Mix color toner slightly on the thin side with small amount of clear added.



5. "Fog" on the first coat. The secondary coats should also be applied sparingly.



6. After paint has had a chance to dry, usually overnight, blades are re-installed.



7. Here's finished hubcap with center painted back. See front cover for appearance.

COLOR CHROME



1. On this hubcap innovation we are dealing with the popular "Moon" type cover. The design consists of numerous circles.



2. By using small 1/4-inch masking tape and a tape ruler, each circle can be checked for correct width completely around cap.

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3. Every taped circle is measured against the previous one for perfection in width.



4. Once circles are completed, larger masking tape and paper are used to cover cap.



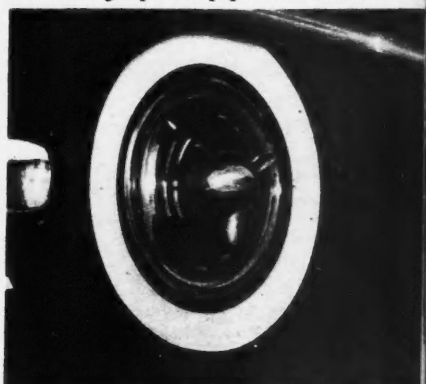
5. The first coat is "fogged" on with the following coats being applied sparingly.



6. After surface has completely dried the masking tape and paper are removed.



7. A cream polish works best for polishing. DO NOT USE ABRASIVE POLISHES.



8. Here's finish cover: a striking contrast of Lime/Gold and green spinner and blades.

Goulart's Cart

BY GENE WINFIELD

LeRoy Goulart of
Stockton, California,
shows just how
"full" a semi-custom
can be



Unusually flared front fenders, and a molded and rolled grille opening are features of LeRoy Goulart's '51 Ford coupe restyling done by Winfield's Custom Shop, Modesto, Calif. '56 Chrysler center bars are inserted; hood peaked and louvered. Split '55 Pontiac front bumper has been fitted.



Dodge Lancer side trim is used effectively to further lower car's appearance. Reworked A arms, reversed spindles, C-d frame lend car its low silhouette.



Ends from '49 Pontiac grille bars were used to form unusual sculpturing around '56 Olds "98" taillight lenses. Also noteworthy is use of fiberglass to form shroud over license plate on rear deck. Green-gold paint is used. Under hood is a '54 Oldsmobile mill. Interior is rolled and pleated.

TORCH TIPS



'53 Chevrolet's gift to custom car builders

Photos by George Barri



UNIVERSAL GRILLE shells don't come along every year. One that was introduced some three years ago, but has taken up 'til now to be officially recognized by custom car builders as an adaptable piece for almost all makes and models—is the '53 Chevrolet grille frame. Being that frame's contours are practically flat and it possesses very little taper, minimum modification are only deemed necessary to make it fit up to most cars' front body paneling and grille openings. Once installed, the Chev's frame cavity lends itself to just about any grille combination that a customizer might want for appearance. The following photo story is all that is needed to get you started on building one of these special grille openings for your custom



1. First step is that of brazing the lip bar of the grille shell solid to the frame.



2. Next, the lower rear corners of frame can be cut off if desired (see lead photos).



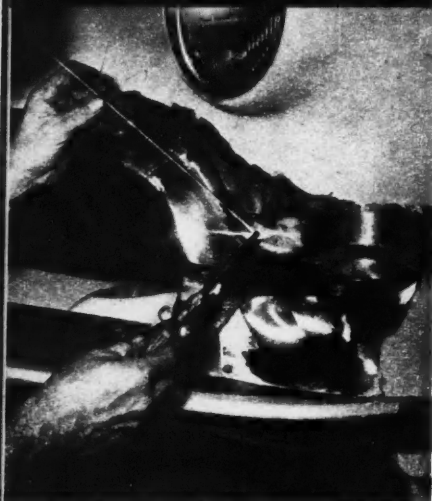
3. If frame is cut, the edges must be worked out to correspond with opposite side.



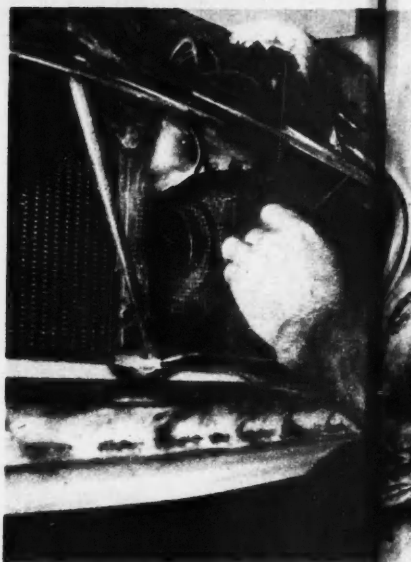
4. Paint around the grille cavity is now ground off using an electric grinder.

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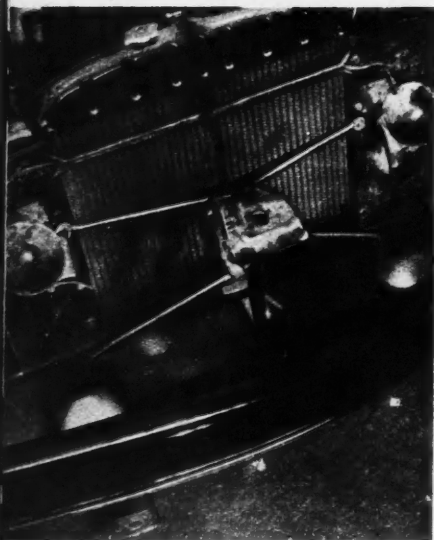
TORCH TIPS



3. The grille frame is now positioned and spot braced to the body at 1-inch intervals.



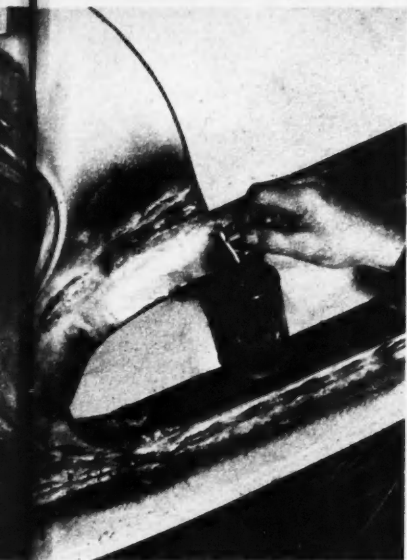
6. The latch plate for the hood will need extra support bracing (see step no. 7). 9. C edge



7. Here is the latch assembly with its added support bracing; $\frac{1}{2}$ " rod is used.



8. The forward edge of the latch plate must be trimmed off slightly due to hood



9. Close hood and mark off where hood edges strike frame; cut with a hacksaw.



10. The lip bar of the grille's frame is now welded to leading edge of the hood.



11. Small gaps found at both ends of the hood are now filled with sheet metal.



12. The hood and lip bar of the frame are now aligned to the other frame members.

TORCH TIPS



13. The grille shell is now solidly welded to front body paneling and gravel shield.



14. Employing the electric grinder once more, grind the working area semi-smooth.



15. A rotary brush and hand drill are used to thoroughly clean all the brazed areas.



16. Tin surface, then apply stick lead. Contour lead over surface with lead paddle.



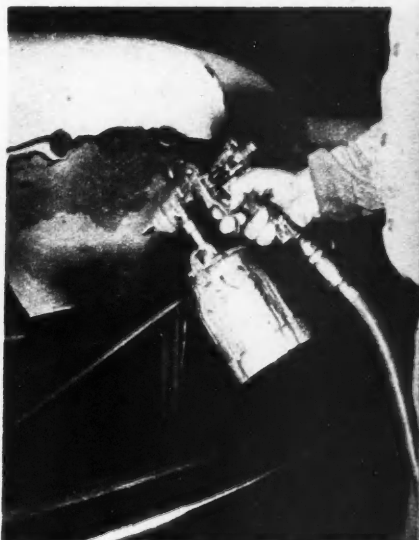
17. The surface is now worked to perfection by hand filing with various vixen files.



18. The bare metal is now sanded by hand and old paint feather-edge sanded.



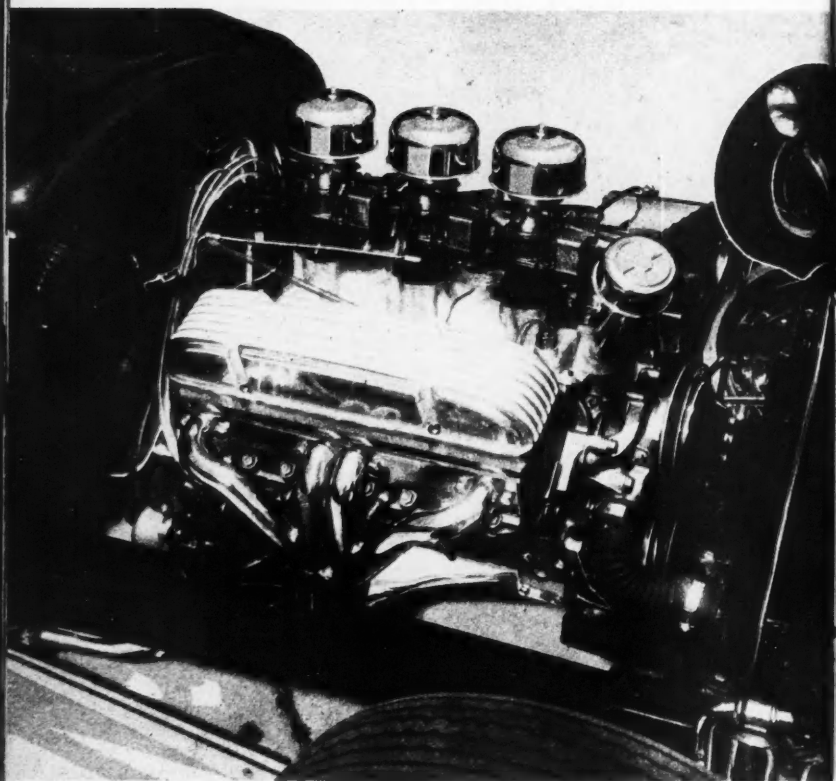
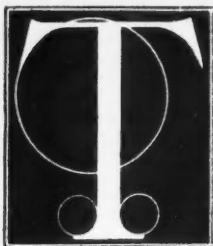
19. Surface is now washed with wax and grease removed, then metal prep solution.



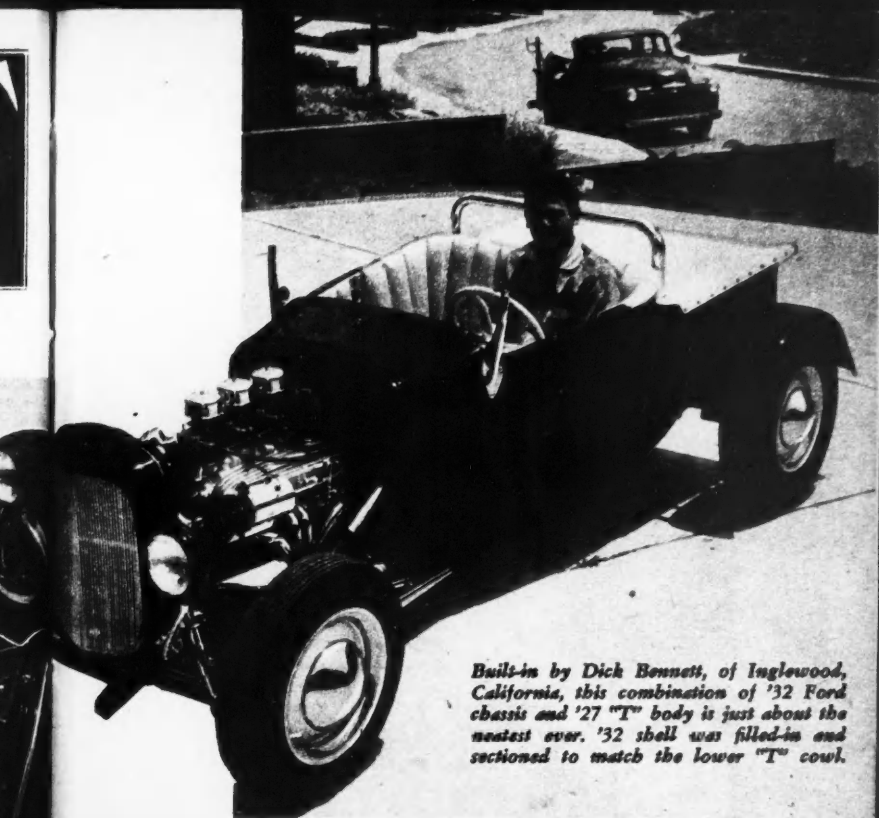
20. Last steps consists of prime painting, then blocksanding surface to perfection.

THE TIDIEST

*Chevrolet-charged truck
is equally at home
on street and strip*



Bored an eighth and stroked a quarter, '56 Chevrolet V8 powerplant displaces 306.6 cubic inches. Jahns Hi-Dome pistons raise compression to $9\frac{3}{4}$ to 1, held in by Sealed Power rings. An Engle cam, Offenhauser triple manifold and Corvette ignition are used, along with Headman "Hedders." Flywheel is stock, has 12" Buick clutch.



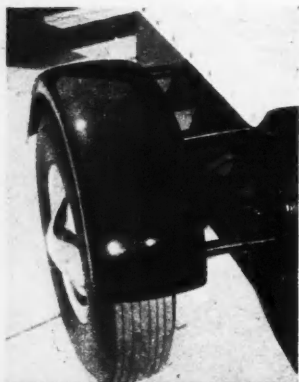
Built-in by Dick Bennett, of Inglewood, California, this combination of '32 Ford chassis and '27 "T" body is just about the neatest ever. '32 shell was filled-in and sectioned to match the lower "T" cowl.



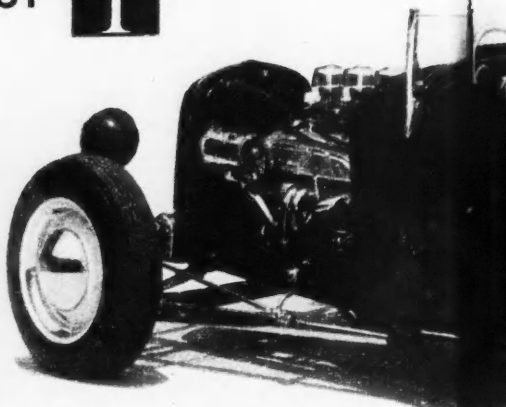
The 15" wide-base Mercury wheels are halted in their flight by healthy hydraulics from a '40 Ford. The '32 Ford steering and front suspension insure good handling. The radius rods were split and attached to the side rails with Ford truck tie-rod ends.

THE TIDIEST

T



California law requires rear fenders on all cars over 1500 pounds laden weight. Bennett complied with this neat set-up.



Pick-up bed was made up from sheet steel stock to approximate dimensions of shortened original. Tarp conceals ultra-sturdy roll bar bracing. Accessory license plate light and traditional '39 Ford blinkers handle rear illumination in legal manner.

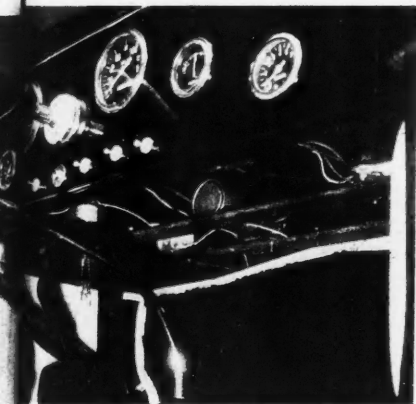


Driveline consists of '34 Ford gearbox using heat-treated gears driving through shortened torque-tube and driveshaft into '40 Ford rear end carrying a 4.11:1 ratio ring and pinion set. Rakish angle of Columbus tubular shocks holds sway in check on curves.

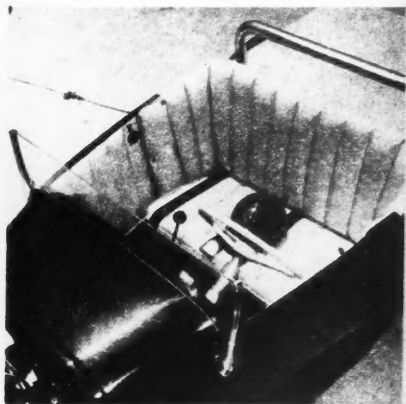




PHOTOS BY ERIC RICKMAN



Secret of featureless firewall shown in lead photo is revealed here. Shelf under dash holds all the electrical components usually exposed in conventional location.



White leather interior by Dan's Top Shop contrasts handsomely with jet-black exterior. Only lower half of two-piece "T" windshield used, held by stock brackets.



Neil Emory



Clay Jensen

VALLEY CUSTOM RESTYLES

THE '42-'48 FORD/MERC



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VALLEY CUSTOM SHOP, known to many custom car enthusiasts for their tedious and detailed workmanship, is the crew behind this month's cleverly restyled '42-'48 Ford and Mercury. This is the second time around for this particular year, make, and model due to persistent requests from devoted "restyling" readers. It's interesting to note that Valley's treatment for this classic model is one that does not merely rely on adaptable late model components for its styling, but rather items from other cars as far back as its own vintage. The secret being; employing only those pieces that would accentuate its original styling but give it a modern facelifting. Many times late model, or current components are installed in a custom-to-be just for the sake of being first with the component installation. Components

selected for this model were very well thought out; all tending to bring the bulbous lines up to date and to make a play for added width.

BODY MODIFICATIONS

Actual body modifications were kept very moderate; stock side trim was replaced with narrower trim from a '49 Merc. Fenders also received narrower rub strips from a '48 Ford. '39 Ford door handles were used in conjunction with the narrower side trim due to the fact that they are also narrow in design. Forward fender pads were discarded and all holes filled.

HOOD, GRILLE AND HEADLIGHT MODIFICATIONS

'55 Chevrolet pick-up grille with vertical
CONTINUED



ILLUSTRATIONS BY DICK COLLIER

bars removed was substituted for the stock grille assembly. Headlights were frenched utilizing '52-'54 Ford headlight rims. All chrome trim found on grille's lip bar and hood has been given the "deep six." Parking light units also have been removed and areas filled. Bumper takes on clean appearance and augments car's width with bumper bolt head and guards discarded.

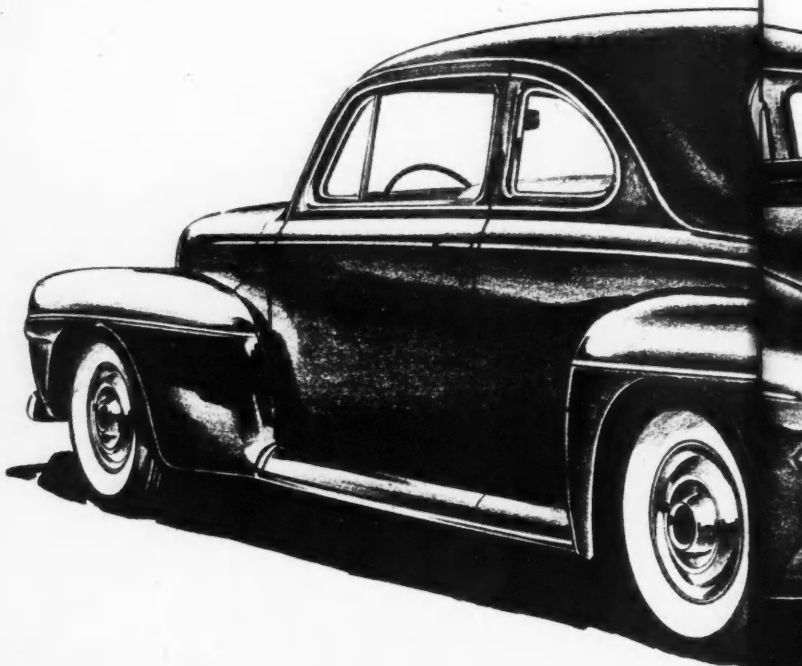
REAR FENDERS AND TAILLIGHT MODIFICATIONS

Major alteration at rear consisted of removing the stock taillights entirely filling in openings, then adapting '50 Merc blinkers

with frames molded directly to fenders in low position. Deck lid received the de-chroming treatment and license plate and frame were bolted along the lower edge of the lid. Rear bumper, like that of the front, has guards and bolt heads removed.

The car's low silhouette is due to "Z-bar" the rear of the frame some full five inches, front, de-arched springs and a dropped axle account for radical lowered look. Lowering necessitated radiusing front and rear wheel openings up to a point just below fender side trim for the purpose of allowing proper clearance in wells and turning radius in front fender cavities.

'42-'48 FORD/MERC RESTYLE



PARTS AND PRICE LIST

	Labor	Parts
"Z" frame five inches	\$200.00	
Install dropped axle and		
de-arch spring	60.00	
Remove trim from hood and fill	5.00	
Remove parking lights	16.00	
Mold grille's lip bar	15.00	
Install '55 Chevy pick-up grille		
(parts included)	125.00	
French headlights	80.00	
Install '49 Merc side trim	15.00	20.00
Install '48 Ford side trim on fenders	7.00	20.00
Remove and fill in taillight areas	20.00	
Remove trim from trunk lid	30.00	
Install license plate on trunk lid	2.00	2.00
French in '30 Merc taillights	50.00	15.00
Radius front and rear		
wheel openings	90.00	
Paint (lacquer)	100.00	
Install '39 Ford door handles	4.00	6.00
	911.00	63.00
	63.00	
TOTAL	\$974.00	



BUILDING AND

PART II BY DON FRANCISCO

LAST MONTH we told you how Rick Rickman began the work on the Olds engine he plans to install in a '54 Corvette. We told you what was done to the engine's crankshaft and connecting rods to enable Potvin full-floating connecting rod bearings to be used with them and how its cylinder block was bored and honed. This month we'll tell you how he installed the crankshaft and other innards in the cylinder block.

The crankshaft was cleaned with solvent to remove any grit that might have been left on it from the grinding. Solvent was run through its oil passages, and when it was flushed with water from a hose, water was directed through the passages with as much pressure as possible to flush them and to see if they would flow full streams. It is important that the passages be open and clean because if they aren't open the flow of oil will be blocked and if they aren't clean the dirt and grit that is in them will be forced into the bearings when the engine is started. This can be the end of the bearings if there is enough of the dirt and grit. The shaft was dried and its ground surfaces lightly oiled to keep them from rusting.

Rick likes Federal Mogul bearings so he bought a set of them for the engine's mains. With the block resting on its upper side, he placed one of the bearing inserts in each of its bearing bores. He made sure the lip on each insert seated in the recess in the bore and then checked the alignment of the oil holes in the bearings with those in the block. It isn't impossible for an insert of the wrong type to be placed in a box at the factory and if the wrong insert should be used and it blocked one of the engine's oil passages, something would run dry and damage would result. He oiled the bearings and then laid the shaft in them.

One of the inserts was placed in each of the bearing caps, the bearings were lubricated, and the caps were placed on their respective journals. The caps are numbered one through four, with number one at the front of the block. The rear cap isn't numbered because it is one of a kind. The caps will bolt to the block in only one position because they fit in an offset broached channel, and their numbers are on the right side of the crank-

shaft when they are on the block. As an additional check, the insert tang recesses in the cap and block must be on the same side of the shaft.

Rick checked the clearance between the crankshaft and the bearings to see if it was within specifications. He did this with two pieces of shim stock approximately $\frac{1}{4}$ inch wide and $\frac{1}{2}$ inch long. One of the pieces was .002 inch thick and the other was .003 inch. He torqued all but one of the caps to the specified tension of 100 foot-pounds for the front four and 140 foot-pounds for the rear and found that the shaft would turn freely by hand. He then laid the thicker of the two pieces of shim stock on the journal that had no cap and then bolted the cap to the block. The shaft was now locked because it could not be turned by hand. Then he removed the caps and switched the pieces of shim stock around and bolted the cap in place again. This time the shaft was free but he didn't turn it any farther than necessary to determine this because he didn't want to scratch the bearing with the shim stock. He then repeated this procedure on all the bearings.

The theory of checking bearing clearance in this manner is that the thinner of the two pieces of shim stock represents the minimum desired clearance in the bearings and the thicker piece the maximum clearance. If the shaft isn't free with the thinner piece in place the bearing being checked doesn't have enough clearance, and if the shaft doesn't lock up with the thicker piece in place the bearing has too much clearance.

The end clearance of the shaft in its bearings was measured by prying the shaft forward as far as it would go and then inserting the blade of a thickness gauge between the thrust flange on the rear bearing and the thrust surface on the crankshaft. The specified clearance is .004 to .008 of an inch. If it had been more or less than this the rear bearing would have had to have been changed.

After checking the clearances Rick removed the shaft from the block and installed the rear main bearing seal in the block and cap. The seal packing must be rolled into the grooves in the block and cap and then be trimmed to length with a razor blade or

OVERHEAD

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OCTOBER, 1957



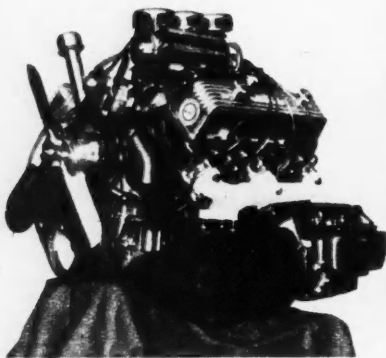
sharp knife. This is a job that must be done correctly or oil will leak past the seal when the engine is running and be lost.

The crankshaft installation was finished by lubricating its journals and the bearings with slippery, non-running mixture of powdered graphite and motor oil, laying it in the bearings, and installing the bearing caps and tightening their capscrews to the specified tensions. The mixture of graphite and motor oil was used to lubricate the crank's bearings because it probably would be a long time before the engine would run. During this

time oil would drip out of the bearings, leaving them without lubrication for the first few revolutions of the crankshaft after the engine was started. This would not be good because the bearings need lubrication badly when the engine is first started so they will not be damaged before they receive oil from the engine's oiling system.

New piston pin bushings were pressed into the rods and honed to a diameter that permitted the pins to be pressed into them easily with a thumb. This is fairly loose but it is the

CONTINUED



BUILDING AN OVERHEAD

recommended fit for an engine of this type. The pistons were assembled on the rods and then the assemblies were aligned on a rod aligning fixture.

Pistons of the type Rick used have domes on their heads to raise the compression ratio of the engine in which they are installed. They are sold by Speed-O-Motive, in El Monte, Calif., and are available for ratios from 9 to 1 to 12 to 1. Rick's pistons provide a ratio of 9.5 to 1 with stock cylinder heads. The idea of these pistons is to enable the compression ratio of an engine to be raised without resorting to head milling and then fighting the consequent intake manifold misalignment. Their material is an aluminum alloy and they have solid skirts, use three rings, come with pins fitted, and have grooves in the end of their pin bores for pin locks.

Grant piston rings were fitted individually to the cylinders in which they were to be used. This must be done with rings of any make so they will have the necessary "end gap" when they are in the cylinders. If a ring doesn't have enough end gap its ends will butt together when it gets hot. When this happens the ring will buckle and probably break.

To check the gap, the rings were slipped into the cylinders, one at a time, and then

Federal-Mogul bearings were selected for their reputation for durability. Inspect must be kept free of grit and dirt during assembly to protect their fine finishes.

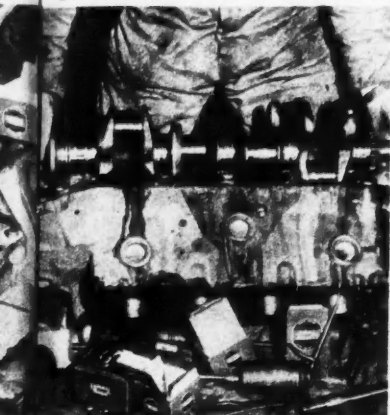


pushed three or four inches into the cylinder with the head of a piston. This aligned the rings with the walls so their gap could be measured with the blade of a thickness gauge. The desired gap was .008 to .010 inch. Those that didn't have enough gap were filed to make the gap wider. This was done by holding a small smooth-cutting file in a vise so its cutting edges were in a vertical position and then moving one end of the ring back and forth along the file. All the rings were fitted in this manner and then kept in order so they could be installed on the correct pistons.

The rings were also checked in the piston grooves in which they were to be used to see if they were of the correct depth for the pistons. This was done by inserting the outer circumference of each of the rings in the piston grooves in which the ring was to be used and seating it on the bottom of the groove. If a ring is usable in the groove in which it is inserted in this manner the surface of its inner circumference will be below the surface of the land on either side of the groove. If the ring surface is above the lands, either the ring is too deep for the groove or the groove is too shallow for the ring.

The relative widths of the rings and grooves were checked by inserting the rings in the grooves in the same manner as for the depth check. A ring was placed in its groove and a thickness gauge was then inserted in the groove alongside it. The desired clearance and e

ed crank is laid in bearings prior to shim-
Inspection clearance check described in text.
during surfaces should not be oiled until after
this preliminary check has been completed.



under this point was .002 inch, with a maximum of
then .003 inch. The rings must have some clearance
insured they won't bind in the grooves but they
e do not have so much clearance that they
e that will allow oil to be pumped around them and
e the to the combustion chambers. While the
small rings were in the grooves for this check they
were rolled around the pistons to see that they
they didn't bind at any point. Sometimes the edges
forth the lands become nicked or otherwise dam-
this aged by rough handling between the time they
could be machined and the time the customer re-
ceives the pistons. When this happens the
damaged spot will bind the ring in the groove
unless it is flattened with a file or some other
means.

uted The rings were installed on the pistons by
the expanding them just enough to slide them
used over the heads of the pistons and then down
over their grooves. Care was taken to install
it is them right side up, as indicated by markings
in their sides. The gap in the oil ring was
placed on the opposite side of the piston from
the groove in its expander and the gaps in all
these rings were staggered around the piston so
over none of them were in line.

With the block resting on the top of its
weight cylinder bank, Rick was ready to install
the pistons in the left bank. The cylinders in
these engines are numbered one, three, five
and seven in the left bank, with number one
at the front of the block, and two, four, six,
and eight in the right bank, with number two

With shim of same thickness as correct
clearance in place, main caps are torqued
to the factory specifications and the crank
is checked for ability to rotate freely.



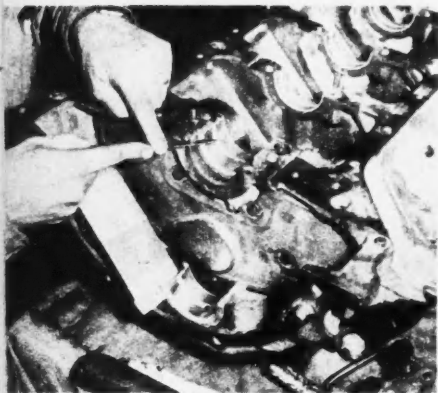
at the front. With the crankshaft turned so the
number one crank-pin was in its lowest posi-
tion in relation to the block, and with the
walls of cylinder number one wiped clean
and then lubricated with clean oil, the block
was ready for its number one piston and rod
assembly.

The "spread" of the Potvin full-floating
rod inserts was adjusted before the pistons
were installed in the block so the inserts
would be ready when they were needed. An
insert's spread is the measurement across its
open side and it must be correct so the inserts
will not bind on the crankpins or in the
rods. It is adjusted by fitting the inserts indi-
vidually to their respective crankpins and con-
necting rods. This is done by increasing or de-
creasing the spread until the inserts fit on the
crankpins and in the bore in the rods without
binding. The spread is increased by laying
the insert on a clean block of wood, open face
down, and then lightly tapping it on the back
with a rubber mallet or some other non-
metallic hammer. The spread is decreased by
holding the insert on the block of wood so it
is supported on one side of its opening and
then tapping the opposite side of the opening.

The piston rings on the piston for cylinder
number one were lubricated with the graphite
and oil mixture and then compressed into
their grooves with a ring compressor. The
cap was removed from its connecting rod and

CONTINUED

After clearance check, rear main oil seal is installed and trimmed to size prior to actual installation of crankshaft. Bearings should now be given preliminary oil.



BUILDING AN OVERHEAD

the rod and the lower end of the piston were inserted in the cylinder. Rick tapped the piston into the cylinder, carefully but firmly to prevent breaking any of the rings, while another fellow guided the lower end of the rod over the crankpin. The pin and the surface of the rod's bore and both sides of one of the bearing inserts were lubricated. The insert was placed on the crankpin and rotated around to where it was in line with the rod and then it was slipped off the pin and seated in the rod. The piston was tapped into the cylinder until the bearing seated on the crankpin. The other bearing insert was lubricated and placed on the pin and then the rod cap was slipped over the rod bolts, with its number on the same side of the crankpin as the number on the rod, and the nuts were run up snugly against the cap. The rest of the rods and pistons were installed in the bank and the block was turned so it rested on the top of its left bank. The rods and pistons were then installed in the right bank and then all the rod nuts were tightened to 45 foot-pounds.

Rick could have installed late model cylinder heads on the engine and taken advantage of their larger intake and exhaust ports and passages and larger valves but he didn't think these things were necessary for the type

After checking in bore for specified end gap rings are filed as required in manner shown here. Only one end of the ring need be shortened, with file held in bench vice.



of driving he would be doing. All he did to the heads that came on the engine was polished their intake and exhaust ports and passages and gave them a good valve job. He didn't mill them because he figured the 9.5 to 1 compression ratio provided by the pistons would be high enough.

After the ports and passages in the heads had been ground to match the openings in the intake and exhaust manifold gaskets, the old valve guides were driven out of the heads and new ones installed. The new guides were lubricated with white lead and driven into their bores until their upper ends were 27/32 of an inch above the valve spring seat surface on the heads.

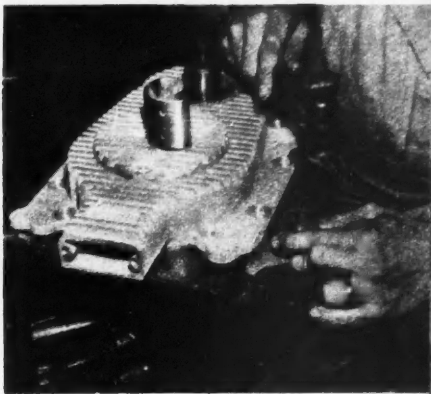
The valve seats were ground with a hard seat grinder to a diameter just slightly smaller than the heads of the valves. The intake seats were finished to a width of approximately 1/16th inch and the exhausts to a width of approximately 3/32nd inch. The stock angles of thirty degrees for the intakes and forty-five degrees for the exhausts were retained. After the seats had been ground, the valve ports were enlarged to match the larger diameter of the seats. This was done carefully so the new seats wouldn't be damaged by the grinding wheel used in the ports.

The valves that came in the heads were cleaned thoroughly with a motor-driven wire brush and inspected for wear and defects. Those with worn stems and burned or cracked

ed on Federal-Mogul rod bearing inserts being trial-fitted to crank in check for sufficient "spread," the distance across the open edge of each individual bearing shell.



Insert with excessive spread being corrected through gentle application of non-metallic mallet. No more than a light tap is usually enough to adjust proper spread.



did heads were discarded and replaced with others in good condition. The valves were then re-passaged on a wet-facing machine and those that didn't finish to a thin edge above their face or appeared to be bent as they were rotated by the grinder chuck were discarded and replaced with others. After the valves were refaced, their stems were ground in a tip grinding attachment on the refacing machine to make them smooth. This is important as it is practically impossible to adjust valve lash correctly when the ends of the stems are pitted. The valves and cylinder heads were cleaned thoroughly with solvent to remove all traces of grinding grit and other foreign matter.

The valve stems and faces and the guides in the heads were lubricated with oil and the smaller valves were slipped into the guides. A valve spring and retainer washer was placed on each valve stem and the spring was compressed with a spring compressor and the split locks inserted in their grooves. The spring was then released and the compressor removed.

Rick didn't want to use a stock camshaft in the engine, but in line with his idea of building an engine that would run well at all speeds and be dependable, he had to be extremely careful of the type of reground cam he used. He took his problem to Ed Iskenderian, of Iskenderian Racing Cams, and Ed recommended his popular E4 Full Rev-Master grind. This grind is in the full-race class and is said to combine good idle characteristics

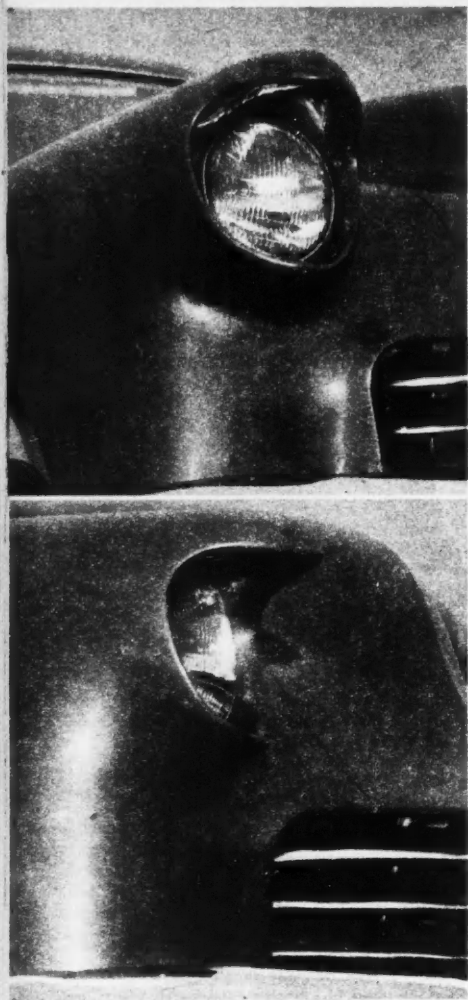
with greatly improved acceleration and top-end performance. Rick's cam is a stock reground but the same grind is also available in Iskenderian's more durable Hard-Faced series for competition engines.

Iskenderian guarantees the cam Rick got for one year, if his chilled-iron valve lifters and the valve springs he recommends are used with it, so Rick also bought a set of the lifters. The lifters came complete with removable pushrod seats and a set of adjusting washers. The seats can be adjusted for height in the lifters to compensate for different pushrod lengths, for milled heads, etc.

The valve springs Iskenderian recommends for this cam are stiffer than those that were on the engine but they are also larger in diameter, which means that the spring seats on the heads must be enlarged before they can be installed. Rick didn't want to take the trouble to have the heads machined so he installed a new set of stock springs. These springs should be stiff enough for the type of driving he will do but if they aren't he will have to change them.

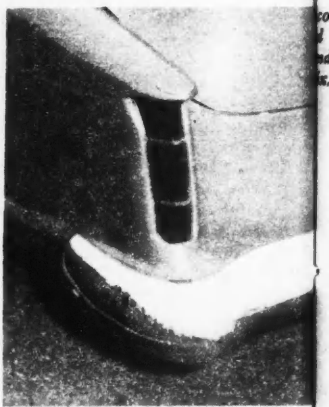
The next step was to measure the length of the valve springs with a narrow rule that could be held alongside a spring and be seated on the head. The length of each spring was compared with the specified length of 1-13/16 inches. The length of valve springs when they are in place on their valves is im-

CONTINUED ON PAGE 60



Headlights, made completely by hand from sheet metal, are just one of the many original innovations found on Eddy Damerai's coupe. Unusual shape simulates "beaked" appearance. Shanklin's Custom Shop of Hayward, Calif., is the craftsman behind Eddy's one-of-a-kind custom. Front bumper has guards and bolt heads removed.

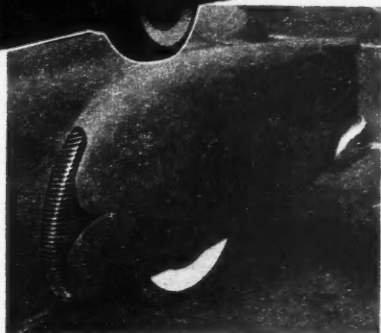
BIZARRE CHEV



Fenders are extended some 14 inches neatly housing '55 Chrysler blinkers. Round rod was used to form edge of opening; note unusual shade design.

Rhanklin's Custom Shop of Northern California creates new custom "look"

Complete one-piece look is given '49 Chevy by filling all body seams. Hood's leading edge has been extended considerably.



Roof carries unusual design also; constructed from small round rod. Door handles and side trim have been given the "deep cut." Skirts are extended to body line.



4 inch link edge design. '55 Pontiac bumpers trim out the molded and extended rear gravel shield. Exterior color is a beautiful Lime-Green. The three grille bars found nestling in special grille cavity emanate from '56 Chrysler. Body has been lowered some five full inches.

GRAB BAG



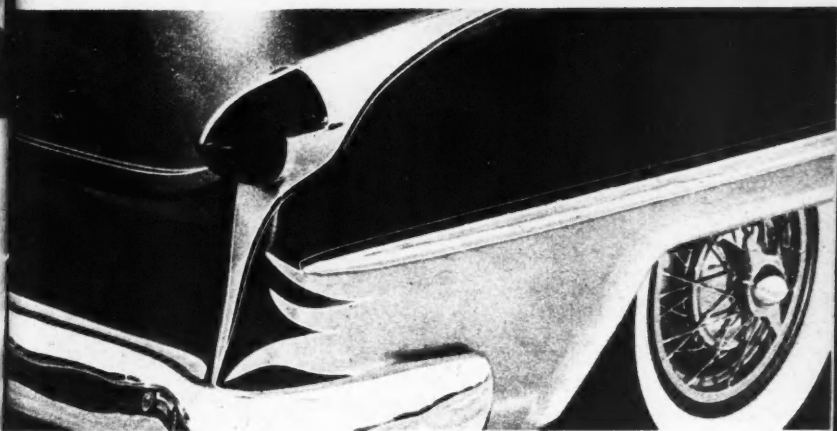
**Oldsmobile taillight lenses have
done it again! '56 Bullet-type
blinkers spark unlimited styling
in any manner-shape-or form**

LEFT • '52-'54 Fords except the "98" Olds lend very well. Blinker is merely cradled into tip of fender actually serving to cover a section of the original taillight's opening. Cost for such a job is moderate.



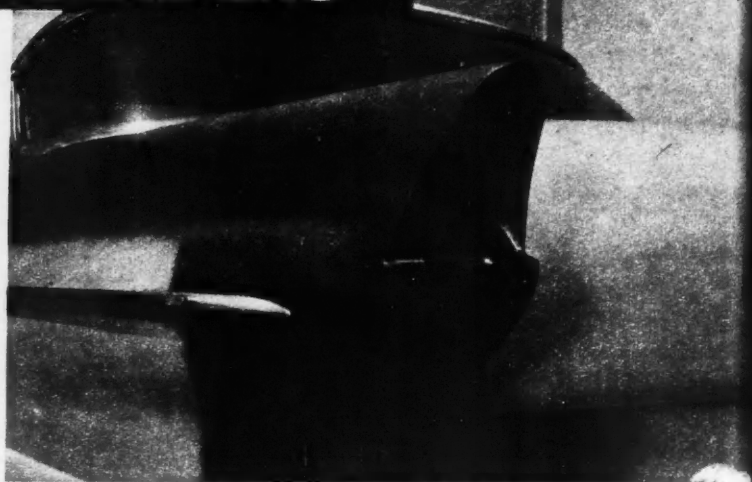
LEFT • Utilizing two "98" lenses, end-to-end, lend this '53-54 Chevrolet plenty custom appearance. Note scallop paints.

RIGHT • Here, "88" lens comes into play topped off with clever shaded effect. The small chrome teeth found on side are stock.

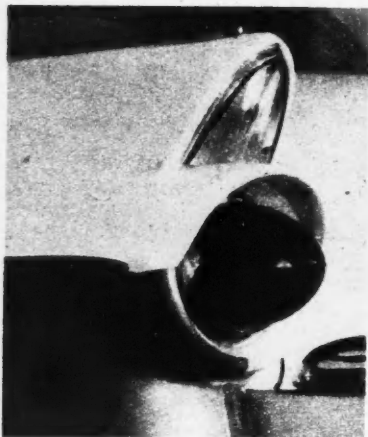


The "98" lens will fit up to most General Motors products similar to that of the Ford pictured above. Lens again is cradled in the tip of the fender. Car is '49-'52 Pontiac which would parallel body style that of the Chevrolet and Oldsmobile of the same years.

GRAB BAG



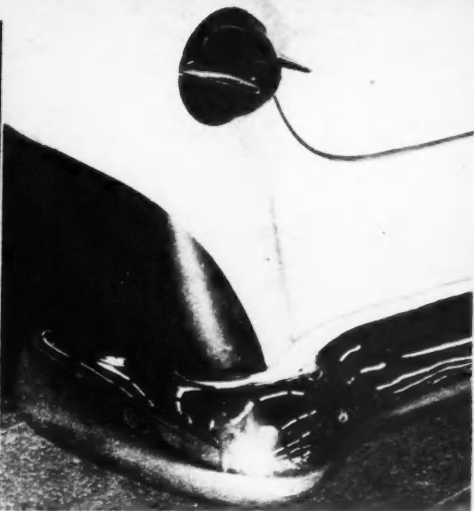
Originality is the theme behind this '55 Ford's radical "98" Oldsmobile tail light installation. Stylish cavity was constructed from sheet metal, using small diameter round rod to finish off edge of opening. Contours are not too far removed from stock



With stock lens removed, "88" lens was neatly butted against bulkhead and special shade constructed for this '55 Fairlane.

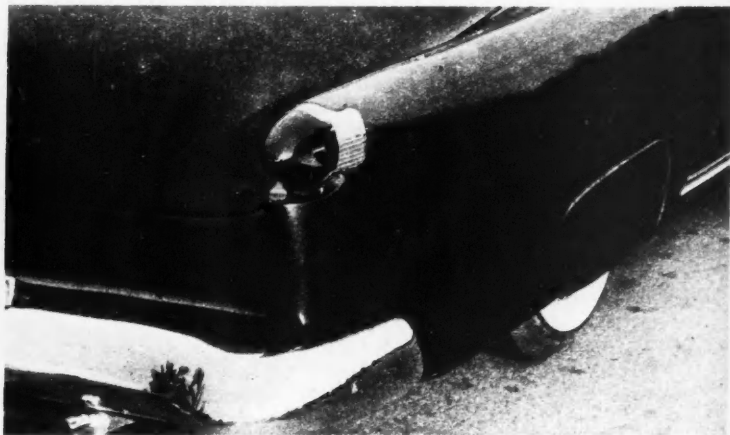


They don't come much nicer than this installation where stock windsplits were built rearward to house lens —'49-'50 Ford



illig "88-98" Olds lens' popularity stems
amam its versatility. Here we see it installed
stock a vertical angle in a '49-'51 Plymouth.

The '52-'54 Ford proves a natural for the
"88" treatment. Work here consists of a
frenched rim, "88" Olds lens, chrome teeth.



is in
won
Ford

The stock assembly of an "88" lens fairs-in nicely with the extended
fender of this '49-'52 Chevrolet. Note small relief in fender just below
light. Olds lens is one of the most universal "parts-counter" components.

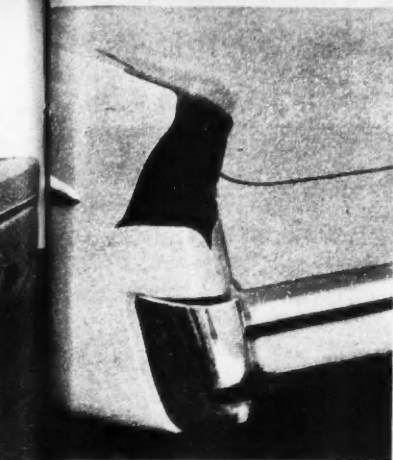


Victorious

It all started with a simple nose and deck job—but today Don Chaves finds himself in the limelight of customizing show business.



Cradled 'tween frame rails of Don Chaves' '53 Merc is warmed-over Olds powerplant. Motivation is transmitted via LaSalle gearbox.



Lincoln Capri lenses are found neatly
ed in rear fenders augmented by the
painting fad — scallops. Exhaust has
routed through tips of planed bumper.

Lower stock grille pan molded to upper
unit forms oblong grille cavity. A much
modified '54 Merc front bumper serves as
floating grille bar. Note scallop paint.

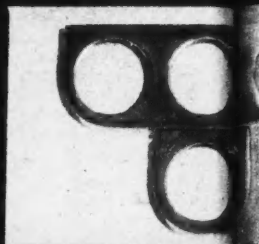
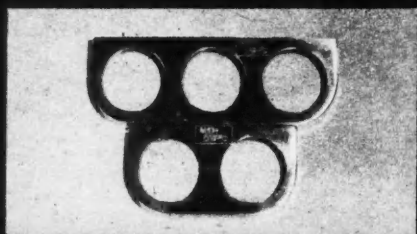
MERC

ob-
lf in
nes

Bailon Custom Shop of San Leandro, California, did all work on Don's Sharp Merc. Car is consistent show winner in semi-custom class. Exterior color combo is '57 Lincoln Pink with deeper shades used for scalloping. Hood is scooped. Park lights are Chev.



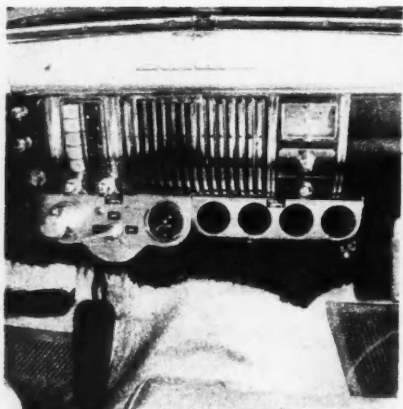
ACCESSORY OF THE MONTH



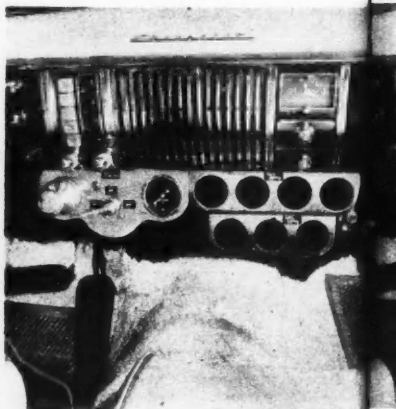
AN ACCESSORY THAT'S ALWAYS welcome is one that is not only functional, but also beautiful. To the rod and custom enthusiasts that make up the readership of this magazine, an item must have both these features before they'll even consider putting it in their car — so that's why we're happy to

present the latest in custom dash panels. Manufactured by that old standby in the customer equipment field, Moon Automotive, these units embody a new feature — they're "modular" in

Modular is a term frequently used in the furniture field to describe a piece that is a part of a set, designed to be "added on to" with

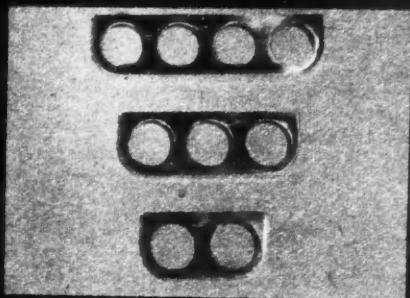
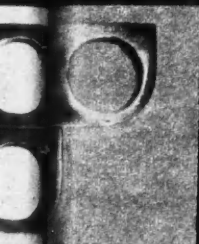


All modular panels are made for 2-1/16" diameter instruments such as S-W brand.



Four-hole panel shown at left is \$7.95 while three-hole unit above costs \$6.95.

Modular Instrument Panels

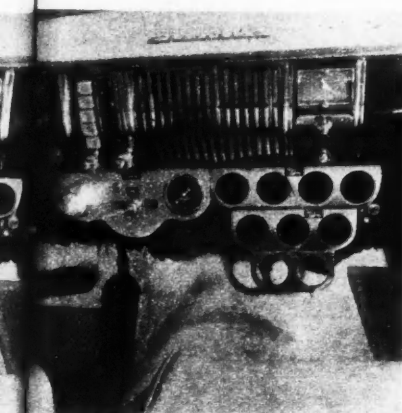


Photos by Eric Rickman

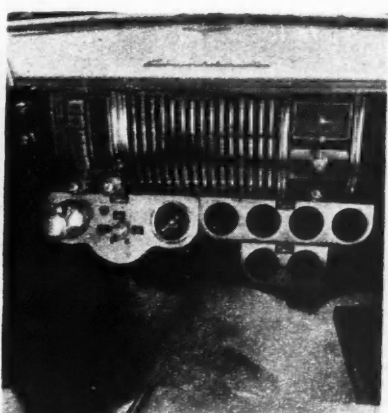
s. Mother pieces that will harmonize with each customer. Enabling the custom car enthusiast/hot rod builder to adapt the dash panel of his car to modular's increasing need for additional instrumentation as more engine equipment is added, the modular panels work like building blocks and "wind a neat, unified appearance to the car's

interior that's worthwhile attaining.

If one or more of the combinations shown on these pages catch your fancy, drop a line to Moon Automotive, 10820 So. Norwalk Blvd., Santa Fe Springs, Calif. — they'll be glad to comply with your request and send you their latest catalog of auto accessories.



7.5" two-hole model is \$5.50; may be used in combination with the other modular units.



Combination pump, three-way shut-off valve and pressure gauge unit costs \$34.00.

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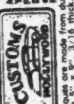
... \$2.89



CAP SPINNER

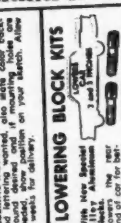
... \$4.95

Custom Car Plaques



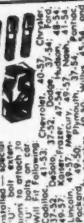
... \$4.95

Lowering Block Kits



... \$3.75

Lowering Block Kits



... \$3.75

Lowering Block Kits



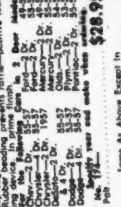
... \$3.75

New Cruiser Fender Skirt



... \$3.75

Lowering Block Kits



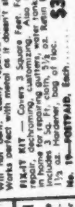
... \$3.75

Lowering Block Kits



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Lowering Block Kits



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Fuel Block Kits



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Lowering Block Kits



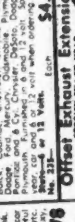
... \$7.95

Lowering Block Kits



... \$7.95

Lowering Block Kits



... \$7.95

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55

1

WHAT'S YOUR PROBLEM?



By **Bob Pendergast**

HEAVY HANDED

Dear Bob:

I have a '50 Ford convertible with a '51 Olds engine. The mill weighs approximately 135 pounds more than the flathead it replaced. I would like to know what I can use for replacement springs and shocks in the front end to help avoid nose-heavy handling.

— *Garry Brown,
Culver City, California*

Nose heavy handling doesn't have to go along with a nose-heavy car, which you now have. Station wagon springs and stabilizer bar of the same year Ford will help; couple these with a set of good shocks such as Gabriel Silver "E" or Gabriel Adjustomatics set on "Firm" and you'll be part of the way there. Higher tire pressures in the front than in the back will reduce the "under-steer" tendency brought on by too much weight up front — but the best single improvement in this direction is a brand new set of front tires, if your present ones are old enough to retire. The stiff sidewalls of new casings really help, and don't start to really taper off in this respect until the tire gets quite old. Avoid so-called "premium" tires — they're too soft and too spongy for your purpose.

OHV MERC STROKER

Dear Bob:

Can a '55 Mercury crankshaft stroked .200" (3.5") or a '56 Merc crank also stroked .200" (3.64") be used in a '54 Ford or Merc?

— *Bob Abbey,
Detroit, Michigan*

Yes, but the trouble makes it cheaper to buy a second-hand '56 312" engine. To use either the '55 or '56 Ford and/or Merc cranks in '54 of either make you must line-bore the block to take the larger diameter main bearings used in the later model engine — the alternative of grinding the crank's main journals down to the smaller diameter of the earlier engine's main bearings isn't as attractive as you might suppose, as the essential overlap between the rod journals and main journals would be decreased to the point of seriously weakening the strength of the crank.

FOREVER FOUR

Dear Bob:

I am in the process of building-up a Model "A" for four-barrel competition. It is bored .040" oversize now — is that enough or should it be more? If so, what type of pistons would you recommend? Should I use three carburetors or four? And most important of all would all of this be too much of a strain on the crankshaft?

— *Tom Bender,
Rosemead, California*

To answer your last question first, yes. A four-barrel Model "A" with a stock crank and lubrication system is bound to pound out bearings and cranks. Although it's not as good as getting the Model "C" crank in the "C" or "B" block, the very least you need is a Model "B" crank in your "A" block. If you simply can't afford one or locate one, use the "A" shaft — but with the understanding that trouble is just around the corner. An easy way to pre-survive at least part of the "A" lower-end is to run oil lines from the rear main cap to the center and front caps. Drill and tap holes for these for suitable fittings. When this is done the drain tube from the rear main to the pan must be plugged to hold the pressure. A probable result of this will be oil on the clutch due to leakage back through the rear main seal — but — well, you can't have everything.

Three or four carbs will be too much — use a single "97" on a downdraft manifold along with a moderate (not over 7.0 to 1) compression flathead. Adjustable tappets, available from Bell Auto Parts, will be needed for use with the reground cam. Lose your mind on the cam, because you can't get both lift and duration from the stock cam because there just isn't enough material for the grinder to work with — so get a wild 'un. These engines have

er to plenty of low-speed torque stock — work for the top end.

FORDOMATIC DISPOSAL

Dear Bob:

I have a '53 Ford convertible with automatic transmission, and would like to install a standard-shift unit with overdrive in its place. What do you suggest?

— Larry Gorsline,
Homer, Michigan

With all due respect and my thanks for your estimation of my knowledge, I suggest that you, and the other ten-jillion readers who want to get rid of their automatics, go to the nearest agency selling the make of car concerned and then sit down and have a heart to heart talk with the parts department manager. Thorough perusal of the illustrated parts breakdown books there will show you exactly what can or can't be done in your particular situation — and at the same time result in your obtaining a list of the parts needed for the conversion and their total price. When we go out to do a how-to-do-it article on this subject this is the way we go about it, so you can see that to do this for each and every inquiry would be similar to blanking-out individual Car Craft's for each inquirer!

GONE GEARING

Dear Bob:

I have a '50 Ford with a '55 Ford V8 OHV engine in it. The only other thing changed was the rear end, a '53 Fordomatic. The transmission is the original. This combination hasn't helped the speed of the car much. What do you think I should do? I want lots of pick-up.

— Jack Tussing,
Columbus Grove, Ohio

You didn't mention an overdrive so we'll have to assume you don't have one. Even without an O.D., the Fordomatic 3.31 ratio rear-end is sufficient all by itself to ruin your performance. The standard '50 rear-end gear was 3.73 — by reducing this to 3.31 you decreased the gear's multiplication of your engine's torque by almost as much as the new engine increased the amount of torque available. If you want lots of pick-up, install a set of 4.11's and forget it. It'll go.

CONTINUED

OCTOBER, 1957

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CULVER CITY 13, CALIF.



WHAT'S YOUR PROBLEM?

EMBALMING FLUID

Dear Bob:

I have a '48 Dodge with Fluid Drive. As this combination does not add up to much go on the drag strip, I would like to have some ideas on economical engine and transmission modifications.

— Jim Calliotte,
St. Louis, Mo.

I started sympathizing with you after the end of your letter's first sentence. Can that awful thing beneath the floorboards — the fluid drive unit, that is, and replace the flywheel with the conventional clutch type of the same year. If you've done any dragging at all with the F.D. you know how to shift it to get the most out of it. Changing the complete trans isn't mandatory, and since the clutch linkage and pedal used with the F.D. is already in the car, just get rid of that slipping monstrosity.

For more power to you, I'd suggest picking up a Chrysler or DeSoto "6" since these are up for grabs real cheap nowadays. Installation of one of these would merely require minor things like radiator relocation which you could easily do yourself. The added displacement would give far more from any modifications such as 3/4 cam, milled head, dual carbs, etc., than you would get from the smaller Dodge mill. Try one of the big-name engine swappers as a source of one of these sixes — they're replacing 'em by the hundreds with V8's so there's plenty around.

TOO MUCH COG

Dear Bob:

I have a '48 Chevrolet with Chev V8 engine. I'm thinking about hooking it to a late Chev stick-shift trans with electric overdrive, and leave in the present rear-end. I want something with good pick-up.

— Arnold Lueth,
Mt. Clemens, Michigan

Don't do it. Besides running into all kinds of trouble trying to adapt the Hotchkiss-drive late trans to the torque-tube drive early rear-end, you'd only be slowing yourself down. If your '48 has the stock 4.11 rear end in it, you're already pulling all the gear you can with a stock Chev V8. California Corvette owners are going to 4.11's in droves since finding out it's the only way to get a stock Corvette to peg the speedometer.

RAPID RAMBLER

Dear Bob:

I have a '55 Rambler and would like your comments on transmission, driveline and rear end to be used with a Chevrolet V8 in the chassis. I selected the Chev because of its compact design, relatively low and reasonable power. Would this be a worthwhile swap?

— Bob Vanacore,
North Haven, Connecticut

It will be if you can get it in! We had a fellow drop by the Peterson Publishing Company and not so long ago herding a flathead Merc powered Rambler. The fit was so tight that the exhaust manifolds had to be installed above the engine, and it would be necessary to remove them first before taking the engine out, too. This is because of the Rambler squeak on rattle-free unit construction — a complete departure from normal design, and a good one, too — but still something that won't stand up for indiscriminate torching, so watch it.

Regarding the driveline components, I'd suggest Chevrolet all the way, using the last of the torque-tube drive series rear ends for easy attachment to your Rambler's rear springs, or a '54 or earlier transmission as well for ease of connection to that rear end. Full advantage of the Chev V8's characteristic high-revving will require use of the close-ratio cogs available for the pre-'55 boxes from accessory firms.

FORD OHV FAN

Dear Bob:

I would like to have your opinion on what kind of cam, carburetion, ignition, etc., would give top performance from a '57 Ford 312" engine. The one I have is the 24-horsepower version, so I would like to know what I'd have after making the suggested modifications.

— Joe Clark,
Carrollton, Ill.

Stand by for a shock — you aren't going to get 245 horsepower, installed (under your present round ambient atmospheric conditions), from this engine either before you hop it up or afterwards — unless you spend a pile of loot. Because factory horsepower ratings are taken without accessories, with such vital items as spark lead adjusted manually for maximum output, a really stock engine running with all accessories operating, manifold heat on, and standard spark advance can't begin to duplicate the factory figure. To add insult to injury

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the factory "corrects" all readings obtained through this already-favorable system to a value which would be actual only if the engine were breathing 60 degree temperature air. Since average underhood temperatures, even in winter, are nearly always considerably above that figure, the loss in density of the intake charge reduces the actual power output from the theoretical even more.

A mild hop-up, if properly done, can bring your "245" up to its optimistic rating. Installation of a good three carburetor manifold, exhaust headers, and racing ignition system will take care of the outside. The '57 Ford cam is so filled out for anything short of the Salt Flats in its dry to stock form I'd leave it alone, but use the engine of 270" pushrods and valve springs for the squeak extra 700 RPM they'll give you on the top end. Complete that should be more than sufficient to allow good one engine to rev up into the range (5,500) stand where the three-jugger and headers pay-off.

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SIXTY SUBSTITUTE

Dear Bob:

Is there a transmission that will fit a '37 Ford "60" besides the original? If so, where might I find one?

— Gary Burkes,
Evansville, Indiana

believe it or not, Sears is your savior — they list an "85" box converted for "60" use in their catalog. Shift lever relocation is required on the floorboards, but I'm sure you won't let that stop you — those "60" boxes are definitely extinct.

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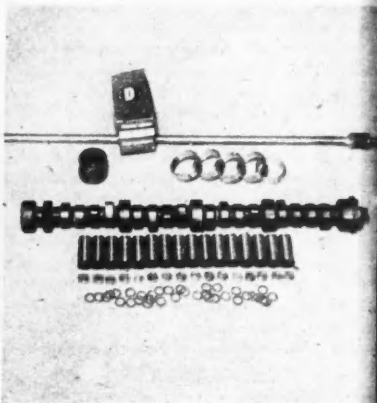
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BUILDING AN OVERHEAD

portant because it affects their tension on the valve stems. If a spring is longer than its specified length its tension will be less than it should and if it is shorter its tension will be more than it should. It is rare that the length will be less than specified because grinding the seats in the heads and the faces of the valves for a valve reconditioning job allows the valves to seat deeper in the heads and makes the distance from the spring washer groove on the valve stem to the spring surface on the head greater.

Rick found that some of the springs measured longer than they should so he shortened them by installing thin washers made for this purpose between their lower end and the head. When all the springs were the correct length, he compressed those that were on intake valves, removed the split locks from the valve stems, and slipped a rubber seal ring over each stem and seated it in its groove below the split lock groove. The purpose of the seal rings is to prevent oil from flowing down the valve stems and into the combustion chambers. The split locks were then reinstalled on the stems and the springs released. The heads were ready to be installed on the cylinder block.

The cam bearings in the block and the bearing journals and cams on the camshaft were lubricated with the graphite and oil mixture and the cam was slipped into the block. This was done carefully to prevent damaging the surfaces of the bearings with the sharp edges of the shaft's cams.

A new set of timing chain sprockets and a new chain were installed. The timing chain and its sprockets control the opening and closing times of the valves in relation to the position of the crankshaft and pistons and it is important that the timing be correct if the engine is to run right. Worn sprockets and a worn chain allow the cam to lag behind the crankshaft, causing the valve timing to be late. Early Olds V8 engines had timing chains of two different widths as stock equipment so Rick took his old chain to the parts store when he bought the new chain and sprockets so he would be sure to get the correct set.

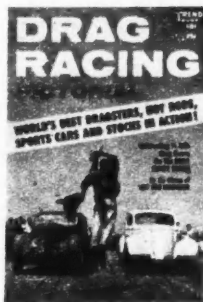
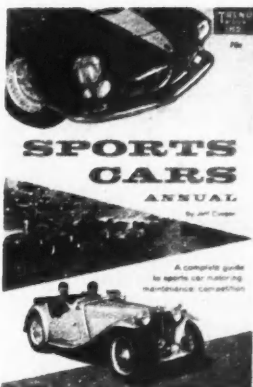
The long square key was tapped into the nose of the crankshaft and then the crank sprocket was tapped onto the shaft with a length of steel tubing and a hammer. The shaft was turned so the "O" mark on the sprocket faced the camshaft. The cam sprocket was slipped onto the cam so the dowel hole in its hub was over the dowel in the end of the cam and then it was turned so its "O" mark faced the mark on the gear.

CONTINUED

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After installation of cam bearing insert shells the cam is pre-lubricated with a graphite and oil mixture to protect it against initial wear from a dry start

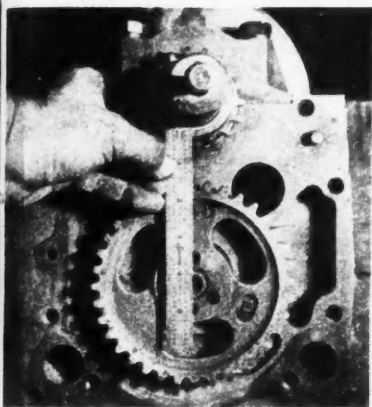


BUILDING AN OVERHEAD

The sprocket was removed from the cam and inserted in the chain. Then the chain was slipped over the crank sprocket and the cam sprocket was slipped onto the end of the camshaft. A check was made to see if the cam was timed correctly to the crankshaft by aligning one edge of a steel rule with the center of the cam and crankshaft to see if the marks on the sprockets were in line with the centers of the shafts. The three bolts that hold the fuel pump, eccentric and the sprocket to the cam were installed with the eccentric and tightened. The chain and sprockets were then lubricated with the graphite and oil mixture.

In the model of engine Rick has, any tendency of the camshaft to move back and forth in the block is controlled by a spring-loaded plunger in the end of the shaft. The plunger contacts a boss on the inside of the timing chain cover. After the spring and plunger were placed in the camshaft and the oil slinger slipped over the nose of the crankshaft, the block was ready for the timing chain cover. Rick installed a new oil seal in the cover, taking care to install it so its lip faced the crank sprocket and its inner edge was flush with the opening in the cover, and then

Proper alignment of Olds timing sprockets when in correct position in relation to each other for installation of timing chain is checked using any type of straight-edge.

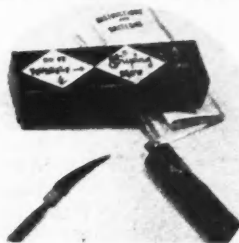


bolted the cover and a new gasket to the block. A pair of dowels hold the cover in alignment with the crankshaft.

The oil pump and its pressure release valve had been disassembled, cleaned, checked for wear, and reassembled prior to this time and now it was bolted to the rear main bearing cap and its capscrews tightened to 11 to 14 foot-pounds. The pump was in good condition internally but if it had been worn it would have been replaced with a new one because a good oil pump is essential to long engine life. New cork side gaskets for the oil pan were placed on the block and held in place with a few dabs of grease on the gasket surface of the block and new end seal rubbers were inserted in the ends of the pan. The surfaces of the rear main bearing cap and the timing chain cover on which the end seals rest were coated with grease so the seals could slip into place without any trouble when the pan was lowered onto the block. The pan bolts were tightened to 9 to 11 foot-pounds and the pan's drain plug was tightened to 22 to 26 foot-pounds.

That takes care of the installation of the crankshaft, piston assemblies, and the camshaft in the cylinder block. Next month we'll tell you how Rick finished the engine by installing its cylinder heads, intake manifold, carburetors, and ignition distributor. Be sure to be with us.

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DEVILLE TYPE STYLING FOR MERC

Dear George:

I recently saw a '49-'51 Mercury with the center post of the car removed simulating a DeVille type styling. I would like to come up with a similar type design for my '50 Merc and would like to know just what modifications would be involved in achieving this appearance?

— Carl Sorrenson,
Portland, Oregon

First remove door post, then install window glass from a convertible. The top is re-fitted to the car, aligned to windows with chrome trim. This particular innovation is a very popular one, Carl, but as you probably know for yourself, it is one that requires a lot of metal working knowledge and body work experience. If you do not possess this experience, then I suggest that you select a local body shop for the job.

TAILLIGHTS FOR LATE PICKUPS

Dear George:

I'm looking for a taillight that would fit my '54 Chevrolet pick-up truck's rear fender with little work involved from the standpoint of installation. Can you give me some suggestions in this department?

— Art Devron,
Jacksonville, Florida

My suggestion would either be '50 Mercury taillights, or the '47 Studebaker lights. Both can be installed horizontally; low and along the bottom edge of the fender.

PLYMOUTH TAILLIGHT FOR CHEVY

Dear George:

I understand that a '56 Plymouth taillight assembly will practically fit right up to the '56 Chevrolet with little or no difficulty—is this true? I would sure appreciate some information on this subject—or possibly, a short how-to-do-it feature in the magazine in the very near future... how 'bout it?

— Dean Wills,
Orange, California

Yes—they fit up very well and in the next issue we plan on featuring a how-to-do-it article on just such an installation.

HUBCAPS AGAIN

Dear George:

I've seen some hubcaps pictured in CRAFT recently where small "star" shaped emblems were adapted around the circumference of the wheel cover. I think that the captions referred to these small emblems as a Pontiac trim piece. What I would like to

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know is what year were they — and also what other small trim can you think of that would fit or adapt to a hubcap in a similar fashion?

— *Jerry McCarthy*
Glendale, Nevada

The stars you are thinking of, Jerry, are from a '51 Pontiac. Accessory stores and custom chrome houses have quite a few small medalion type goodies that can be installed on hubcaps to give them a little added flavor.

'55 PONTIAC BUMPER-GRILLE

Dear George:

I'm contemplating installing a '55 Pontiac bumper for a grille in my '53 Merc. It will fit up very similar to the already stock center bumper bar that the car now possesses. Would it be a good idea to also use the Pontiac's bumper pan in conjunction with the installation?

— *George Barber*,
Weed, California

Yes — it would make a nice installation. It would help fill the grille cavity out giving it fullness.

'55 CHEVY PICKUP GRILLE

Dear George:

Do you think that a '55 Chevrolet pick-up grille, sans vertical bars, would make a nice looking grille for my '47 Plymouth club coupe? I've seen it installed in a couple of late model cars recently and it appears to be a fairly simple installation. Any information you could forward me on this innovation would be greatly appreciated.

— *Dick Barnhart*, *Rochester, N.Y.*

This is rapidly becoming one of the most popular grilles, Dick. Its size and contours are such that it can be installed in just about any make or model. It can either be bolted up to the grille shell, or it can be welded and frenched into the grille's paneling. Just for kicks, check out with this month's restyling feature (page 34) you'll find a neat installation in a '42-'48 Ford/Merc. I mentioned it only to give you an idea of the grille appearance when adapted to another make and model.

SOLID TOP FOR EARLY MODELS

Dear George:

I'm in the process of chopping my '32 Ford coupe and would like to fill in the roof's center section with metal. Sometime ago I read something in one of the automotive magazines that this could be accomplished by using a section of metal from a late passenger car door — it stated that the crown of such doors match that of the deuce perfectly and that it eliminated much of the work making for an easy modification. Could you give me some details on this particular innovation?

— *Dennis James*, *Newark, N.J.*

The suggestion you have can be done, Denny, but I would use a straight universal sheet metal replacement panel which can be procured from auto body supply stores. Cut the panel so that you have a 1-inch overlap around opening, then braze the panel solid, lead and work the surface to perfection. You'll find that using the universal panel is much easier than getting tied up with a door panel type replacement.



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CUSTOM QUERIES

NERF BARS

Dear George:

I'm about ready to build some nerf bar type bumpers for my '50 Ford club coupe and would like to inquire of what type material I should use and of what size in diameter? Also, what would be the method of adapting them to the car; should I use a slip tube method, or attach them right to the stock bumper brackets?

— Andy Lindsay,
Cortez, Colorado

One inch chrome-moly is the more popular, but you can use any size you desire. Other material would possibly be hot roll tubing with a $\frac{1}{2}$ inch wall. Slip tubes are the best arrangement, but if you wish, the stock bumper brackets can be employed for support.

AUTO SHOW QUERY

Dear George:

Knowing that you help stage and participate in many custom auto shows, I would greatly appreciate it if you could explain for me the definite rules that separate the so-called "mild custom class" from that of the "semi-custom" classification? I know this is somewhat out of the ordinary for your "Custom Queries" column, but we are about to present an auto show and would like to include this class in our show if we definitely understood the rules separating these two classes — thank you.

— Lee Bordenau,
President,
Lead Merchants Car Club,
Galesburg, Illinois

There are four custom classifications: Full Customs, Semi Customs, Moderate Customs, Mild Customs.

Full Custom — consists of any car that has had a major modification to the body such as a chopped top, section job or channeling.

Semi Customs — are cars that have everything but chopped tops, a section job, or channeling.

Moderate Customs — cars that have minor work done such as a nosed and deck job, moderate grille or taillight conversion work and possibly an interior change.

Mild Customs — are cars with bolt on accessory items, possibly a special paint job of flames or scallops, but many are just truly clean cars.

FINS

Dear George:

In measuring out the fins on a '57 Dodge recently I found that they could be installed, or at least appeared as though they could be installed, right over the rear fenders of my '54 Mercury with not too much work involved? Could I get your ideas on this modification?

— Stan McDonald,
Waterloo, Iowa

A very good idea, Stan. It has yet to be done to my knowledge, and in giving it some thought I can see where it would be quite a simple installation.

FENDERS FOR PICKUP

Dear George:

Seeing how you just completed building one of the most radical pick-up trucks that I have ever seen I would like to know if you could offer me some suggestions for adapting some different late model pickup fenders to my '55 Ford pick-up truck? You probably have given this department considerable attention when you customized your truck, and others, so thought you'd be just the shop to lend me this information. Thank you.

— Kenneth Barns,
Kansas City, Kansas

I would suggest the '55 Chevrolet pick-up fenders, Kenny. They practically bolt right on and the only necessary modification is a slight amount of work at the ends of the running boards. Check it out and see what you think!

COMING ATTRACTION

Custom cutie for this month is beautiful Barbara Martinez, of San Diego, California. Barbara's substitute for a beach ball is a reversed-rim wheel, the latest styling craze on the Pacific Coast. Starting out on pick-up trucks, the trend to wider treads has been taken up en masse by the custom car fraternity — read all about how you can restyle your car's wheels this way in the November Car Craft, on sale at your favorite newsstand October 10.

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